Test Report on Cement

Project	Package-10.1, Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri R Ramshankar Reddy
Sample ID	Cement (ACC cement) OPC 43 Grade
Date of Sample Tested	04.11.2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	106 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	485 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	6 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

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TEJUS CONSULTANTS

Authorised Signatory

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (M sand)	**Proposed Use**	PCC
Location/Source	At Laboratory	**Date of Sampling**	03-11-2019
Period of Soaking	24 hours	**Date of Testing**	04-11-2019

Sl. No.	Test Property		TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.		664	638	670	
B	Weight of oven - dry sample gm.		655	630	662	
C	Weight of Pycnometer Filled with water gm		1275	1275	1275	
D	Weight of Pycnometer + sample + water gm		1692	1676	1696	
E	Bulk specific gravity	B / (C + A - D)	2.652	2.658	2.659	**2.656**
G	Absorption (%)	(A - B) *100 / B	1.374	1.270	1.208	**1.284**

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri.R Ramshankar Reddy

SIEVE ANALYSIS

Total Weight:	**3000** gms		
Type of Material	**Fine aggregate (M sand)**	**Proposed Use**	PCC
Sample Location	At Site	**Date of Sampling**	04-11-2019
		Date of Testing	04-11-2019

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	208	208	6.93	93.07	90 - 100
2.36 mm	312	520	17.33	82.67	75 - 100
1.18 mm	416	936	31.20	68.80	55 - 90
0.600 mm	486	1422	47.40	52.60	35 -59
0.300 mm	752	2174	72.47	27.53	8-30
0.150 mm	624	2798	93.27	6.73	0 - 10
Pan	202	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhath Bangalore Mahanagara Palike
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division. 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy
Total Weight in gm:	3000

SIEVE ANALYSIS

Type of Material	40 mm down size	Proposed Use	PCC
Sample Location	At Site	Date of Sampling	04.11.2019
		Date of Testing	04.11.2019

IS Sieve Size	Weight Retained in gm	Cum. Weight Retained in gm	Cumulative Weight Retained in %	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA-2007) % of Passing For Graded Aggregate of Nominal Size
80.00mm	0	0	0.00	100.00	100
63.00mm	0	0	0.00	100.00	-
40.00mm	84	84	2.80	97.20	95-100
20.00mm	1422	1506	50.20	49.80	30-70
10.00mm	978	2484	82.80	17.20	10-35
4.75mm	428	2912	97.07	2.93	0-5
Pan	88	3000	100.00	0.00	

Remarks : Satisfactory / Not Satisfactory

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NABL ACCREDITED AS PER ISO/IEC 17025:2017

Job No.: CECTC/RR/QC/2020-21 Date: 05.11.2019

TEST RESULTS OF PHYSICAL PROPERTIES OF REINFORCEMENT STEEL

Client	:	**Bruhath Bangalore Mahanagara Palike.**
Contractor	:	**Sri R Ramshankar Reddy,** Contractor, Bangalore.
Name of Work	:	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Sample Identification	:	10mm & 12mm Fe 500 TMT Bars
Technical Reference	:	IS 1786:2008, IS 1608:2005, IS 1599:1985 (Reaffirmed 2006)
Date of test:	:	05.11.2019

Sl.No	Nominal size (dia in mm)	Mass per metre (kg/metre)	TENSILE STRENGTH		
			0.20 % proof stress/ yield stress ($N/mm^{2)}$	Tensile strength ($N/mm^{2)}$	Elongation, percent on gauge length
1	10	0.618	530	582	17
2	12	0.896	547	596	18

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For Civil Experts
Sushantha cp.
Authorised Signature

174, Sri Ranga Complex, Amrutha Nagar Main Road, New Bank Colony, Konanakunte, Bangalore - 560 062.
Mobile : +91 97429 59595 | Tel/Fax : 080 2632 2565 | Email : civilexpertsltd@gmail.com | URL : www.civilexperts.co.in

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Test Report on Cement

Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 byrasandrapura sub division. 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division. 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.R Ramshankar Reddy
Sample ID	Cement (ACC Cement) OPC 43 Grade
Date of Sample Tested	07.11.2019
Sample Supplied By	Agency

Sl.No.	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 12269-1987
1	a) Initial Setting Time	IS-4031 (Part-5)	106 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part-5)	472 Minutes	Not More than 600 Minutes
2	Soundness	IS-4031 (Part-3) By the Le-Chatelier method	4 mm	Not More than 10 mm
3	Standard Consistency	IS-4031 (Part-4)	28.00%	25 % to 35

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TEST REPORT

Clients	BRUHAT BENGALORE MAHANAGARA PALIKE
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

SPECIFIC GRAVITY AND WATER ABSORPTION

FINE AGGREGATE (IS-2386-PART-3)

Type of Material	Fine aggregate (M sand)	**Proposed Use**	concrete
Location/Source	At Laboratory	**Date of Sampling**	06.11.2019
Period of Soaking	24 hours	**Date of Testing**	07.11.2019

Sl. No.	Test Property	TRIAL - 1	TRIAL - 2	TRIAL - 3	
A	Weight of sturated surface dry sample gm.	650	672	645	
B	Weight of oven - dry sample gm.	642	664	637	
C	Weight of Pycnometer Filled with water gm	1275	1275	1275	
D	Weight of Pycnometer + sample + water gm	1684	1698	1680	
E	Bulk specific gravity $\frac{B}{(C+A-D)}$	2.664	2.667	2.654	**2.662**
G	Absorption (%) $\frac{(A-B)*100}{B}$	1.246	1.205	1.256	**1.236**

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	Tejus Consultants, Bangalore
Contractor	Sri.R Ramshankar Reddy

SIEVE ANALYSIS

Total Weight:	3000 gms		
Type of Material	Fine aggregate M sand)	Proposed Use	concrete
Sample Location	At Site/Plant	Date of Sampling	07.11.2019
		Date of Testing	07.11.2019

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing (Zone-II)
10.00 mm	0	0	0	100.00	100
4.75 mm	212	212	7.07	92.93	90 - 100
2.36 mm	308	520	17.33	82.67	75 - 100
1.18 mm	426	946	31.53	68.47	55 - 90
0.600 mm	480	1426	47.53	52.47	35 -59
0.300 mm	736	2162	72.07	27.93	8-30
0.150 mm	630	2792	93.07	6.93	0 - 10
Pan	208	3000			-

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Consultants	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy
Total Weight:	10000 gms

SIEVE ANALYSIS

Type of Material	20 mm down size	**Proposed Use**	Concrete	
Sample Location	At site	**Date of Sampling**	06.11.2019	
		Date of Testing	07-11-2019	

IS Sieve Size	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
40.00 mm	0	0	0	100	100
20.00 mm	272	272	2.72	97.28	95 - 100
10.00 mm	4836	5108	51.08	48.92	25 - 55
4.75 mm	4228	9336	93.36	6.64	0 - 10
Pan	664	10000			

Satisfactory / Not Satisfactory

Remarks :

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TEST REPORT

Clients	Bruhat Bangalore Mahanagara Palike	
Project	Package-10.1. Construction of anganawadi building at kogilu in ward no.06 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.	
Consultants	TEJUS CONSULTANTS	
Contractor	Sri.R Ramshankar Reddy	
Total Weight:	10000	gms

SIEVE ANALYSIS

Type of Material	12.5 mm down size	Proposed Use	CONCRETE
Sample Location	At Site/Plant	Date of Sampling	06.11.2019
		Date of Testing	07.11.2019

IS Sieve Size (in mm)	Weight Retained	Cum. Weight Retained	Cum. % Retained	Cum. % Passing	Spec. Limit (%) Passing
20.0	0	0	0	100	100
12.5	534	534	5.34	94.66	90-100
10.0	4452	4986	49.86	50.14	40-85
4.75	4550	9536	95.36	4.64	0-10
Pan	464	10000			

Remarks : ✓ Satisfactory / Not Satisfactory

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	*Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.*
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.R Ramshankar Reddy
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	07.11.2019	14.11.2019	7 days	8.125	22500	310	13.78	13.78
2	07.11.2019	14.11.2019	7 days	8.136	22500	312	13.87	
3	07.11.2019	14.11.2019	7 days	8.148	22500	308	13.69	

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TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bangalore Mahanagar Palike
Consultant	TEJUS CONSULTANTS
Contractor	Sri.R Ramshankar Reddy
Grade of concrete:	M20
Size of cube:	150x150x150 mm
Reference IS code:	IS:516-1959

Sl.No.	Date of Casting	Date of testing	Age of Test	Weight of Cube	Area of Cube	Failure load	Compressive strength	Avg. Compressive strength
				Kg	mm^2	KN	N/mm^2	N/mm^2
1	07.11.2019	05-12-2019	28 days	8.128	22500	486	21.60	21.60
2	07.11.2019	05-12-2019	28 days	8.142	22500	490	21.78	
3	07.11.2019	05-12-2019	28 days	8.150	22500	482	21.42	

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GRADATION FOR GSB
(As per MORT&H 400-1,Grading-II)

Name of Work	:	Package:10.1. Construction of anganawadi building at kogilu in ward no46 byatarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division, 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura		
Client	:	BRUHAT BANGALORE MAHANAGARA PALIKE		
Consultant	:	M/s Tejus Consultants		
Contractor	:	Sri.R Ramshankar Reddy		
Date of Testing	:	02-12-19		
Type of Mix	:	GSB		
Sample I/D	:	GSB1		
Sample Location:	6th A Cross from Temple to end	Date of Sampling:	02-12-19	
		Date of testing:	02-12-19	
Type of material & Purpose:	GSB	Oven Dry Wt.(gms):	10000.0	

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
75	0	0	0.00	100.00	-
53	0	0	0.00	100.00	100.00
26.5	2242	2242	22.42	77.58	70-100
9.5	2542	4784	47.84	52.16	50-80
4.75	784	5568	55.68	44.32	40-65
2.36	1212	6780	67.80	32.20	30-50
0.425	1972	8752	87.52	12.48	10-15
0.075	822	9574	95.74	4.26	<5
Pan	426.0				
Total	10000.0				

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TEJUS
CONSULTANTS

Consultant's Representative

Project	Package-10.1. Construction of anganwadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	BRUHAT BANGALORE MAHANAGARA PALIKE
Consultant	M/s Tejus Consultants
Contractor	Sri.R Ramshankar Reddy

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28))

Date of Testing	09-12-19		
Layer no. or level	GSB layer		
Depth of hole	200mm		
Chainages	6th A Cross from Temple to end'@20	6th A Cross from Temple to end'@50	6th A Cross from Temple to end'@80
	1	2	2
Field density:			
Wt. of wet material from hole (Ww) gms.	5984	5976	5992
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10580	10572	10570
Wt. of sand in hole+ cone (w3) gms.	4420	4428	4430
Wt. of cone gms.	1080	1080	1080
Wt. of sand gms.	3340	3348	3350
Bulk density of sand (γs)gm/cc	1.32	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.36	2.36	2.36
Moisture meter reading(moisture content)	6.50	6.40	6.40
Result			
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.22	2.21	2.22
MDD	2.25	2.25	2.25
OMC	6.30%	6.30%	6.30%
% compaction obtained	98.69	98.42	98.62
% compaction required	98%	98%	98%

Note:
1. The report shall not be reproduced, except in full, without the written approval of the laboratory.
2. The results indicated above are based on the tests carried out on the samples received in the laboratory/Site.
3. Any Query regarding the report must be reported reported within 15days from the date of testing.

Authorised Signatory

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Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

AGGREGATE IMPACT VALUE (IS: 2386 Part - 4)

Proposed Use	WMM	**Date of Sampling**	**16-12-2019**
Sample Location	At Plant	**Date of Testing**	**16-12-2019**

Sl. No.	Description		Test No. 1	Test No. 2	Test No. 3	Spec Limit (%)
1	Wt. of stone pieces (dry) passing IS Sieve 12.5mm but retained in IS sieve 10mm (gm)	(Wa)	356.00	368.00	342.00	
2	Wt. of the fraction retained in IS sieve 2.36mm after the impact test (gm)	(Wb)	274.00	282.00	262.00	
3	Wt. of the fraction passed in IS sieve 2.36mm after the impact test (gm)	(Wc)	82.00	86.00	80.00	
4	Aggregate Impact Value (%)	(Wc/Wa)*100	23.03	23.37	23.39	
5	Average Aggregate impact value	(%)	23.27			Max - 30 %

Remarks : Satisfactory / Not Satisfactory

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Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		WMM		**Proposed Use**	**WMM**
Sample Location		At plant		**Date of Sampling**	**16-12-2019**
				Date of Testing	**16-12-2019**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	524	85	526	74
16.0	12.5	1134	115	984	114
12.5	10.0	728	60	724	54
10.0	6.3	614	55	564	40
Total		**3000**	**315**	**2798**	**282**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.50
Elongation Index(%):	10.08
Combined FI+EL (%)	20.58

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Name of Work	:	Package-10.1. Construction of anganawadi building at kogilu in ward no05 hytarayanapura sub divisson, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwar Nagar Bangalore
Contractor	:	Sri.R Ramshankar Reddy
Date of Testing	:	16-12-2019
Type of Mix	:	WMM
Sample I/D	:	WMM 1

GRADATION FOR WMM

(As per MORT&H 400-11)

Sample Location:	6th A Cross Phase 1	Date of Sampling:	15-12-2019
		Date of testing:	16-12-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	374	374	3.74	96.26	95-100
22.4	1796	2170	21.70	78.30	60-80
11.2	2250	4420	44.20	55.80	40-60
4.75	1994.0	6414	64.14	35.86	25-40
2.36	1398.0	7812	78.12	21.88	15-30
0.6	766.0	8578	85.78	14.22	8.0-22.0
0.075	882.0	9460	94.60	5.40	0-8
Pan	540.0	10000			
Total	10000.0				

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Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 bytarayanapura sub division, 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

FLAKINESS AND ELONGATION INDICES (IS 2386, PART 1)

Type of Material		WMM		**Proposed Use**	**WMM**
Sample Location		At plant		**Date of Sampling**	**17-12-2019**
				Date of Testing	**17-12-2019**
Size of aggregate		**Flakiness Index**		**Elongation Index**	
Passing through IS sieve, mm	**Retained on IS sieve, mm**	**Total wt. of aggregate retained on sieves (A) gms.**	**Wt. of aggregate passing from Flakiness gauge (B) gms**	**Wt. of aggregate retained on Flakiness gauge (C) gms**	**Wt. of aggregate retained on Elongation gauge after retained on Flakiness gauge(D)gms**
63.0	50.0	0	0	0	0
50.0	40.0	0	0	0	0
40.0	31.5	0	0	0	0
31.5	25.0	0	0	0	0
25.0	20.0	0	0	0	0
20.0	16.0	534	86	522	74
16.0	12.5	1136	120	1002	114
12.5	10.0	732	60	724	54
10.0	6.3	622	56	564	40
Total		**3024**	**322**	**2812**	**282**

Note: Minimum 200 Pcs should be taken on each fraction of test

Flakiness Index(%):	10.65
Elongation Index(%):	10.03
Combined FI+EL (%)	20.68

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Name of Work	:	Package-15/1: Construction of approach to existing building at Jogthi in ward no01 to Basaveshwara sub division. 2.Improvements of roads and drains at Ward No:05 to Ward No:06 and 07 connecting roads in Ward No:05 Basaveshwara Sub Division. 3.Improvements to Roads and Drains at Tabassum Layout Cross Roads in Ward No:05 Basaveshwara Sub division. 4.Improvements to Roads and Drains at Shivanandaswamy 1st stage cross roads in Ward No: 05 Basaveshwara Sub division
Client	:	Bruhat Bengaluru Mahanagara Palike
Consultant	:	TEJUS CONSULTANTS, Basaveshwara Nagar Bangalore
Contractor	:	Sri.R.Ramshankar Reddy
Date of Testing	:	17-12-2019
Type of Mix	:	WMM
Sample ID	:	WMM 1

GRADATION FOR WMM
(As per MORT&H 400-13)

Sample Location:	6th A Cross Phase 1	Date of Sampling:	16-12-2019
		Date of testing:	17-12-2019
Type of material & Purpose:	WMM	Oven Dry Wt.(gms):	10000.0

IS Sieve size in mm	Weight retained	Cummulative weight retained (gm)	Cummulative % of retained	Cummulative % of passing	Specification limits
53	0	0	0.00	100.00	100.00
45	374	372	3.72	96.28	95-100
22.4	1796	2162	21.62	78.38	60-80
11.2	2250	4412	44.12	55.88	40-60
4.75	1994.0	6445	64.45	35.55	25-40
2.36	1398.0	7820	78.20	21.80	15-30
0.6	766.0	8586	85.86	14.14	8.0-22.0
0.075	882.0	9468	94.68	5.32	0-8
Pan	532.0	10000			
Total	10000.0				

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Project	Package-10.1. Construction of anganawadi building at kogilu in ward no05 byatarayanapura sub division. 2.Improvements of roads and drains at Ward No.05 to Ward No.06 and 07 connecting roads in Ward No.05 Byatarayanapura Sub Division. 3.Improvements to Roads and Drains at Telecom Layout Cross Roads in Ward No 05 Byatarayanapura Sub division, 4.Improvements to Roads and Drains at Shivaramakaranthanagara 1st stage cross roads in Ward No 05 Byatarayanapura Sub division.
Client	Bruhat Bengaluru Mahanagara Palike
Consultant	TEJUS CONSULTANTS Basaveshwar Nagar Bangalore
Contractor	Sri.R Ramshankar Reddy

Field Dry Density test by Sand Replacement Method (As per IS 2720 (Part 28)		
	Date:	19-12-2019
Layer no. or level	WMM I layer	
Depth of hole	200mm	
Field density:	1	2
Chainages	6th A cross Phase-1'@50	6th A cross Phase-1'@100
Wt. of wet material from hole (Ww) gms.	5982	5978
Wt. of sand+cylinder before pouring (w1) gms.	15000	15000
Wt. of sand+cylinder after pouring (w2) gms.	10592	10594
Wt. of sand in hole+ cone (w3) gms.	4408	4406
Wt. of cone gms.	1080	1080
Wt. of sand gms.	3328	3326
Bulk density of sand (γs)gm/cc	1.32	1.32
Bulk density of material(i.e. wt. of the wet material) (γb)=(Ww/w4*(γs))gm/cc	2.37	2.37
Moisture meter reading(moisture content)	6.40	6.20
Result		
FDD(Wt.of the dry material)=(100γb/100+mc)gm/cc	2.23	2.23
MDD	2.27	2.27
OMC	6.10%	6.10%
% compaction obtained	98.24	98.41
% compaction required	98%	98%

Consultant's Representative

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